

<b>Substitute for form 1449A-B/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <b>COPY FROM PARENT</b> (use as many sheets as necessary)	<b>Complete if Known</b> <i>09/19/54, 692</i>	
	Application Number	<del>09/747419</del> <i>unassigned</i>
	Filing Date	<del>November 18, 2000</del> <i>unassigned</i>
	First Named Inventor	Phillip A. Patten
	Group Art Unit	Unassigned <i>1634</i>
	Examiner Name	Unassigned <i>3-210mer</i>
Attorney Docket Number		<del>02-020520US</del> <i>02-020522US</i>

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
	AA	6,396,548		Stemmer	08-01-2000	
	AB	6,117,679		Stemmer	09-12-2000	
	AC	6,132,970		Stemmer	10-17-2000	

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Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				
	AD	WO	98/42832		Cal Tech	10-01-1998		
	AE	WO	98/41653		Novo Nordisk	09-24-1998		
	AF	WO	99/29902		Cal Tech	06-17-1999		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					T
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			
	AG	CARTER, "Improved Oligonucleotide-Directed Mutagenesis Using M13 Vectors," <u>Methods in Enzymology</u> , 154:382 (1987)			
	AH	KRAMER AND FRITZ, "Oligonucleotide-Directed Construction of Mutations via Gapped Duplex DNA," <u>Methods in Enzymology</u> , 154:350-367 (1987).			
	AI	KUNKEL, "Rapid and efficient site-specific mutagenesis without phenotypic selection," <u>PNAS</u> , 82:488-492 (Jan. 1985).			
	AJ	KUNKEL et al., "Rapid and Efficient Site-Specific Mutagenesis without Phenotypic Selection," <u>Methods in Enzymology</u> , 154:367-382 (1987).			
	AK	ZOLLER AND SMITH, "Oligonucleotide-Directed Mutagenesis: A Simple Method using Two Oligonucleotide Primers and a Single-Stranded DNA Template," <u>Methods in Enzymology</u> , 154:329 (1987).			
	AL	PRODROMOU et al., (1992) "Recursive PCR: a novel technique for total gene synthesis." <u>Protein Engineering</u> 5(8): 827-829.			
	AM	Statutory Declaration signed by Ruth Bird as filed in pending Australian opposition case, Australian Application No. 703264.			
	AN	Statutory Declaration signed by Ngaire Pettit-Young as filed in pending Australian opposition case, Australian Application No. 703264.			
	AO	Statutory Declaration signed by Mae Li Gan as filed in pending Australian opposition case, Australian Application No. 703264.			

Examiner Signature		Date Considered	
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Substitute for form 1449A-B/PTO  INFORMATION DISCLOSURE STATEMENT BY APPLICANT  <b>COPY FROM PARENT</b>	Complete if Known	
	Application Number	<del>00/709,002</del> Unassigned
	Filing Date	<del>December 18, 1996</del> Unassigned
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
	Attorney Docket Number	<del>02-020500US</del> 02-020522US

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
	AA	4,766,106		Katre et al.	08-23-1988	
	AB	4,795,699		Tabor et al.	01-03-1989	
	AC	4,816,567		Cahill et al.	03-28-1989	
	AD	4,902,502		Nitecki et al.	02-20-1990	
	AE	5,264,563		Huse	11-23-1993	
	AF	5,314,809		Erlach et al.	05-24-1994	
	AG	5,512,463		Stemmer	04-30-1996	
	AH	5,514,568		Stemmer	05-07-1996	
	AI	5,514,588		Varadaraj	05-07-1996	
	AJ	5,523,388		Huse	06-04-1996	
	AK	5,541,311		Dahlberg et al.	07-30-1996	
	AL	5,547,859		Goodman et al.	08-20-1996	
	AM	5,574,205		Kucherlapati et al.	11-12-1996	
	AN	5,667,974		Birkenmeyer et al.	09-16-1997	
	AO	5,698,426		Huse	12-16-1997	
	AP	5,756,316		Schellenberger	05-26-1998	
	AQ	5,770,434		Huse	06-23-1998	
	AR	5,808,022		Huse	09-15-1998	
	AS	5,824,496		Horwitz et al.	10-20-1998	
	AT	5,830,696		Short	11-03-1998	
	AU	5,843,643		Ratner	12-01-1998	
	AV	5,858,725		Crowe	01-12-1999	
	AW	5,866,363		Pieczenic	02-02-1999	
	AX	5,871,974		Huse	02-16-1999	
	AY	5,877,402		Maliga et al.	03-02-1999	
	AZ	5,885,813		Davis et al.	03-23-1999	
	BA	5,928,905		Stemmer et al.	07-27-1999	
Examiner Signature				Date Considered		

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Substitute for form 1449A-B/PTO  INFORMATION DISCLOSURE STATEMENT BY APPLICANT  <b>COPY FROM PARENT</b> (use as many sheets as necessary)	Complete if Known	
	Application Number	<del>08/769,062</del> Unassigned
	Filing Date	<del>December 18, 1996</del> Unassigned
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
Attorney Docket Number		<del>02-020500US</del> 02-020512-US

	BB	5,955,358		Huse	09-21-1999	
	BC	5,965,415		Radman et al.	10-12-1999	
	BD	6,001,574		Short	12-14-1999	
	BE	6,004,788		Short	12-21-1999	
	BF	6,015,694		Dubenskey et al.	01-18-2000	
	BG	6,000,110		Short	02-29-2000	
	BH	6,051,049		Hansen et al.	04-18-2000	
	BI	6,054,267		Short	04-25-2000	
	BJ	6,057,103		Short	05-02-2000	
	BK	6,071,889		Weiss et al.	06-06-2000	
	BL	6,074,853		Pati et al.	06-13-2000	
	BM	6,087,177		Wohlstadter	07-11-2000	
	BN	6,093,873		Chambon et al.	07-25-2000	
	BO	6,096,548		Stemmer	08-01-2000	
	BP	6,114,115		Wagner, Jr.	09-05-2000	
	BQ	6,117,679		Stemmer	09-12-2000	
	BR	6,132,970		Stemmer	10-17-2000	
	BS	6,153,410		Arnold et al.	11-28-2000	
	BT	6,159,687		Vind	12-12-2000	
	BU	6,171,820	B1	Short	01-09-2001	
	BV	6,174,673	B1	Short et al.	01-16-2001	
	BW	6,168,919	B1	Short	01-02-2001	
	BX	6,177,263	B1	Arnold et al.	01-23-2001	
	BY	5,795,747		Henco	08-18-1998	

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Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				
-	BZ	EP	0 544 809	B1	Ixsys, Inc.	12-16-1998		
	CA	EP	0 563 296	B1	Ixsys, Inc.	03-17-1999		

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	Application Number	<del>08/760,062</del> - Unassigned
	Filing Date	<del>December 18, 1996</del> Unassigned
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
Attorney Docket Number	02-020500US 02-020522US	

	CB	EP	0 552 266	B1	The Wellcome Foundation LTD.	01-19-2000		
	CC	EP	0 397 463	A2	Berlex Laboratories	11-14-1990		
	CD	EP	0 397 463	A3	Berlex Laboratories	11-14-1990		
	CE	WO	90/14424	A1	Scripps Clinic and Foundation	11-29-1990		
	CF	WO	92/06176	A1	IXSYS, Inc	04-16-1992		
	CG	WO	92/18645	A1	Henco	10-29-1992		
	CH	WO	93/01282	A1	Berlex Laboratories, Inc.	01-21-1993		
	CI	WO	93/18175	A1	Life Technologies, Inc.	09-16-1993		
	CJ	WO	93/19172	A1	Cambridge Antibody Technology LTD.	09-30-1993		
	CK	WO	94/11496	A1	IXSYS, Inc	05-26-1994		
	CL	WO	97/46670	A1	Massachusetts Institute of Technology	12-11-1997		
	CM	WO	99/29902	A1	California Institute of Technology	06-17-1999		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
	CN	ADEY ET AL. "Preparation of second-generation phage libraries." Proteins 227-291. (1996)	
	CO	Berger et al. "Prospective: Expanding the Potantial of Restriction Endonucleases: Use of Hapaxotermistic Enzymes." Anal Biochemistry 222:1-8 (1994)	
	CP	Biotransformations Amer Soc. Abstract no. 11-21&11-25 Pg. 26 (July 1989)	
	CQ	CARTER "Improved Oligonucleotide-Directed Mutagenesis Usinf M13 Vectors." Methods of Enzymology 154:382-403 (1985)	
	CR	COLLET ET AL. "A binary plasmid system for shuffling combinational antibody libraries." Proc. Natl. Acad. Sci. USA 89(21):L10026-10030 (1992)	
	CS	DANGL ET AL. "Rapid Isloation of Cloned Isotype Switch Variants Using Fluprescent Activated Cell Sorting." Cytometry 2(6):395-401 (1982)	
	CT	DIERICK ET AL. "Incorporation of dITP of 7-deaza dGTP during PCR improves sequencing of the product." Nuc. Acid Res. 21(18):4427-4428 (1993)	
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	Application Number	<del>06/769,062</del> Unassigned
	Filing Date	<del>December 18, 1996</del> Unassigned
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
	Attorney Docket Number	02-020500US-02-020522US

CU	FULLEN ET AL. "Genetic Algorithms and Recursive Ensemble Mutagenesis in Protein Engineering." Complex. Int. 94, from website (1992)
CV	HEDA ET AL. "A simple in vitro site directed mutagenesis of concatamerized cDNA by inverse polymerase chain reaction." <i>Nuc. Acids Res.</i> 20(19):5241-5242 (1992)
CW	HIGUCHI ET AL. "A general method of in vitro preparation and specific mutagenesis of DNA fragments study of protein and DNA interactions." <i>Nuc. Acids Res.</i> 16(15):7351-7367 (1988)
CX	HODGSON "The Whys and Wherefores of DNA Amplification." <i>Biotechnology</i> 11(8):940-942 (1993)
CY	Kang et al. Antibody redesigned by chain shuffling from random combinatorial immunoglobulin libraries." <i>Proc. Natl. Acad. Sci. USA</i> 88(24):11120-11123 (1991)
CZ	KLUG ET AL. "Creating chimeric molecules by PCR directed homologous DNA recombination." <i>Nuc Acids. Res.</i> 19(10):2793 (1991)
DA	KOMANO ET AL. "Distribution of Shufflon among IncI Plasmids." <i>J. Bacteriology</i> 169(11):5317-5319. (1987)
DB	KOMANO ET AL. "Physical and Genetic Analysis of IncI2 Plasmid R721: Evidence for the Presence of Shufflon." <i>Plasmid</i> 23:248-251. (1991)
DC	KRAMER & FRITZ "Oligonucleotide-Directed Construction of Mutations via Gapped Duplex DNA." <i>Methods of Enzymology</i> 154:350-367 (1978)
DD	Kunkel "Rapid and Efficient Site-Specific Mutagenesis without Phenotypic Selection." <i>Methods in Enzymology</i> 154:367-382 (1987)
DE	KUNKEL "Rapid and efficient site-specific mutagenesis without phenotype selection." <i>Proc. Natl. Acad. Sci. USA</i> 82:488-492 (1985)
DF	LOWNAM ET AL. "Affinity Maturation of Human Growth Hormone by Monovalent Phage Display." <i>J. Mol. Biol.</i> 234:654-678 (1993)
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DH	MERYHANS ET AL. "DNA recombination during PCR." <i>Nuc Acids. Res.</i> 18(7):1687-1691 (1990)
DI	MICHAEL "Thermostable Ligase-Medicated Incorporation of Mutagenic Oligonucleotides During PCR Amplification." <i>Meth. In Mol Biol.</i> 67:189-195 (1997)
DJ	NER ET AL. "Laboratory Methods." <i>DNA</i> 7:127-134 (1988)
DK	OLSEN ET AL. "Hybrid Baccillus (1-3,1-4)- $\beta$ -glucanases: engineering thermostable enzymes by construction of hybrid genes." <i>Mol. Gen. Genet</i> 225(2):177-185 (1987)
DL	REIKOFSKI & TAO "Polymerase Chain Reaction (PCR) Techniques for Site-directed Mutagenesis." <i>Biotech Adv.</i> 10:535-547(1992)
DM	ROBLES ET AL. "Hydropathy and Molar Volume Constraints on Combinatorial Mutants of the Photosynthetic Reaction Center." <i>J. Mol. Biol.</i> , 232:242-252 (1993)
DN	ROUWENDAL ET AL. "Simultaneous Mutagenesis of Multiple Sites: Application of the Ligase Chain Reaction Using PCR Products Instead of Oligonucleotides." <i>Biotechniques</i> 15(1):68-70, 72-74, 76 (1993)
DO	SANDHU ET AL. "Dual Asymmetric PCR: One-Step Construction of Synthetic Genes." <i>Biotechniques</i> 12(01):14-16 (1992)

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	Application Number	08/769,062 Unassigned
	Filing Date	December 18, 1996 Unassigned
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
Attorney Docket Number		02-020600US-02-020522US

	DP	SHI ET AL. "Rapid PCR Construction of a Gene Cotaining Lym-1 Antibody Variable Regions." <i>PCS Meth. &amp; Appl.</i> 3:46-52 (1993)	
	DQ	SHULDINER ET AL. "Hybrid DNA artifact from PCR of closely related target sequences." <i>Nus. Acids Res.</i> 17(11):4409 (1989)	
	DR	SMITH ET AL. "Localized sex in Bacteria." <i>Nature</i> 349:29-31 (1991)	
	DS	Statutory Declaration by Mae Li Gan No. 703264	

	DU	Statutory Declaration by Ruth Bird No. 703264	
	DV	STEMMER ET AL. "A 20-Minute Ethidium Bromide High-slat Extraction Protocol for Pasmid DNA." <i>Biotechniques</i> 10(6):726 (1991)	
	DW	STEMMER ET AL. "Enzymatic Inverse PCR- A Restriction Cite Independent, Single-Fragment Method for High-Efficiency, Site-Directed Mutagenesis." <i>Biotechniques</i> 13(2):214. (1992)	
	DX	STEMMER ET AL. (1991) R342 "Expression of Antibody By Fragments Specific for a Heavy Metal Chelate (indium EDTA) in E-Coli." <i>J. Cell Biochem</i> 217	
	DY	STEMMER ET AL. "Increased Antibody Expression for Escherichia-Coli Through Wobble-Base Library Mutagenesis by Enzymatic Inverse PCR." <i>Gene</i> 123(1):1-7. (1993)	
	DZ	WU ET AL. "Allale-specific enzymatic amplification of $\beta$ -globin genomis DNA for diagnosis of sickle cell anema." <i>Proc. Natl. Acad. Sci</i> Vol 86:2757-2760. (1999)	
	EA	ZOLLER & SMITH "Oligonucleotide-Directed Mutagenesis: A Simple Method using Two Oligonucleotide Primers and a Single-Stranded DNA Template." <i>Methods in Enzymology</i> 154:329-347 (1987)	

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	Application Number	<del>08/769,062</del> <b>Unassigned</b>
	Filing Date	<del>December 18, 1996</del> <b>Unassigned</b>
	First Named Inventor	<b>Phillip A. Patten</b>
	Group Art Unit	<b>1634</b>
	Examiner Name	<b>Zitomer, S.</b>
	Attorney Docket Number	<b>02-020500US-02-020522US</b>

U.S. PATENT DOCUMENTS						
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	AA	5,665,859		Wallach et al.	09-09-1997	
	AB	5,741,694		Hasrtup et al.	04-21-1998	
	AC	5,750,373		Garrard et al.	05-12-1998	
	AD	5,427,930		Birkenmeyer et al.	06-27-1995	
	AE	5,792,607		Backman et al.	08-11-1998	

PTO  
09/05/99  
09/12/01

FOREIGN PATENT DOCUMENTS								
Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				

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(Modified) PTO/SB/08A-B (10-96)  
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)	Compl to if Known		
	Application Number	09/954,692	
	Filing Date	September 12, 2001	
	First Named Inventor	Phillip A. Patten	
	Group Art Unit	Unassigned 09/954,692	
	Examiner Name	Unassigned	
		Attorney Docket Number	02-020522US

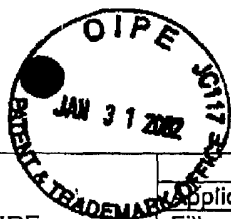
U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
SE	AA	5,498,531		Jarrell	09-10-1993	
	AB	5,501,962		Bradford-Goldberg et al.	03-26-1996	
	AC	5,538,868		Horn et al.	07-23-1996	
	AD	5,708,153		Dower et al.	01-13-1998	
	AE	5,837,500		Ladner et al.	11-17-1998	
	AF	6,180,406	B1	Stemmer	01-30-2001	
	AG	6,238,884	B1	Short et al.	05-29-2001	
	AH	6,280,926	B1	Short	08-28-2001	
	AI	6,287,861	B1	Stemmer et al.	09-11-2001	
	AJ	6,291,158	B1	Winter et al.	09-18-2001	
	AK	6,291,161	B1	Lerner et al.	09-18-2001	
	AL	6,291,242	B1	Stemmer	09-18-2001	
	AM	6,297,053	B1	Stemmer	10-02-2001	
	AN	6,303,344		Patten et al.	10-16-2001	

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Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				
SE	AO	AU	703,264		Stemmer et al.	03-25-1999		
	AP	AU	724,698		Arnold et al.	10-01-1998		
	AQ	AU	732,146		Patten et al.	06-25-1998		
	AR	EP	0 316 018	A2	Cetin Corp	05-17-1989		
	AS	EP	0 316 018	A3	Cetin Corp	05-17-1989		
	AT	EP	0 385 410	B1	Baylor College Medicine	01-25-1990		
	AU	EP	0 439 182	B1	Backman et al.	07-31-1991		
	AV	EP	0 596 918	B1	Birkenmeyer et al.	05-18-1994		
	AW	EP	0 633 944	B1	Bouma et al.	01-18-1995		

Examiner Signature	<i>SE Patten</i>	Date Considered	6-23-03
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(Modified) PTO/SB/08A-B (10-96)  
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Complete if Known

Application Number	09/954,692
Filing Date	September 12, 2001
First Named Inventor	Phillip A. Patten
Group Art Unit	Unassigned
Examiner Name	Unassigned
Attorney Docket Number	02-020522US

22	AX	EP	0 876 509	B1	Maxygen, Inc.	11-11-1998	
	AY	EP	0 911 396	A2	Maxygen, Inc.	04-28-1999	
	AZ	EP	0 911 396	A3	Maxygen, Inc.	04-28-1999	
	BA	EP	1 094 108	A2	Stemmer et al.	04-25-2001	
	BB	EP	1 094 108	A3	Stemmer et al.	04-25-2001	
	BC	EP	1 103 606	A2	Stemmer	12-02-1996	
	BD	EP	1 103 606	A3	Stemmer	12-02-1996	
	BE	JP	04 229 200		Backman et al.	08-18-1992	
	BF	WO	86/05803		Ballivet et al.	10-09-1986	
	BG	WO	90/00626	A1	Baylor College Medicine	01-25-1990	
	BH	WO	93/00447	A1	Birkenmeyer et al.	01-07-1993	
	BI	WO	93/20227	A1	Bouma et al.	10-14-1993	
	BJ	WO	93/24656	A1	Marshall et al.	12-09-1993	
	BK	WO	94/08047		Bouma et al.	04-14-1994	
	BL	WO	94/12632			06-09-1994	
	BM	WO	96/17056		Pasteur Institute	06-06-1996	
	BN	WO	97/07206		Okkels	02-27-1997	
	BO	WO	97/20918		Short	06-12-1997	
	BP	WO	97/35957		Stemmer	10-02-1997	
	BQ	WO	98/13485		Stemmer et al.	04-02-1998	
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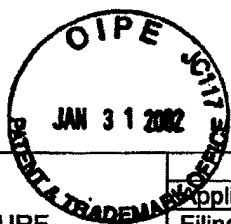
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**OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
SC	BT	Armon et al. (1990) "Assembly of the 26 S complex that degrades proteins ligated to ubiquitin is accompanied by the formation of ATPase activity." <i>J. Biol Chem</i> 265(34):20723-20726	
	BU	Arnold (1998) "When blind is better: protein designed by evolution." <i>Nat Biotechnology</i> 16(7):617-618	

Examiner Signature	S. Z. Patten	Date Considered	6-23-03
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



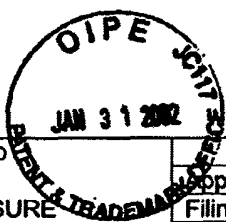
(Modified) PTO/SB/08A-B (10-96)  
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)	Complete if Known	
	Application Number	09/954,692
	Filing Date	September 12, 2001
	First Named Inventor	Phillip A. Patten
	Group Art Unit	Unassigned
	Examiner Name	Unassigned
	Attorney Docket Number	02-020522US

SV	BV	Arnold et al. (1997) "Optimizing industrial enzymes by directed evolution." <i>Adv. Biochem. Eng. Biotechnol.</i> 58:1-14	
	BW	Bale et al. (1984) "Kinetics of formation of fibrin oligomers III Ligation kinetics concurrent with and subsequent to oligomer assembly." <i>Biopolymers</i> 23(1):127-138	
	BX	Barany (1991) "The ligase chain reaction in a PCR world." <i>PCR Methods Appl.</i> 1(1):5-16	
	BY	Bolli et al (1997) "Pyranosyl-RNA: chiroselective self-assembly of base sequences by ligative oligomerization of tetranucleotide-2', 3'-cyclophosphates (with a commentary concerning the origin of biomolecular homochirality)." <i>Chem Biol</i> 4(4):309-320	
	BZ	Crameri et al. (1993) "Display of biologically active proteins on the surface of filamentous phages: a cDNA cloning system for selection of functional gene products linked to the genetic information responsible for their production." <i>Gene</i> 137(1):69-75	
	CA	Daughtery et al. (1994) "Bohr effect of the partially-ligated (CN-met) intermediates of hemoglobin as probed by quaternary assembly." <i>Biochemistry</i> 33(34):10345-10357	
	CB	Doyle et al. (1992) "cooperative oxygen binding, subunit assembly, and sulfhydryl reaction kinetics of the eight cyanomet intermediate ligation states of human hemoglobin." <i>Biochemistry</i> 31(45):11182-11195	
	CC	Gaskin et al. (1997) "Directed evolution of a industrially important enzyme." <i>Biochem Soc Trans</i> 25(1):155	
	CD	Gilbert et al. (1997) "Origion of genes." <i>PNAS UDS</i> 94(15):7698-7703	
	CE	Giver et al. (1998) "Combinatorial protein design by in vitro recombination." <i>Curr Opin Chem Biol.</i> 2(3):335-338	
	CF	Giver et al. (1998) "Directed evolution if a thermostable esterase." <i>PNAS USA</i> 95(22):12809-12813	
	CG	Graf et al. (1996) <i>PNAS USA</i> 11591-11596	
	CH	Hurst et al. (1996) "A difficult phase for introns-early Molecular evolution." <i>Curr Biol</i> 6(5):533-536	
	CI	Kaczorowski et al. (1994) "Asseby of 18-nucleotide primeters by ligation of three hexamers: sequencing of large genomes by primer walking." <i>Analytical Biochemistry</i> 221(1):127-135	
	CJ	Kaczorowski et al. (1996) "Automated four-color DNA sequencing using primers assembled by hexameter ligation." <i>Gene</i> 179(1):195-198	
	CK	Kalin et al. (1992) "Evaluation of the ligase chain reaction (LCR) for the detection of point mutations." <i>Mutant Res</i> 283(2):119-123	
	CL	Kato et al. (1996) "Construction of mini-F plasmid vectors for plasmid shuffling in Escherichia coli." <i>Gene</i> 170(1):141-142	

Examiner Signature	<i>S. Patten</i>	Date Considered	6-23-08
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(Modified) PTO/SB/08A-B (10-96)  
Approved for use through 10/31/99 PMB 0651-0011

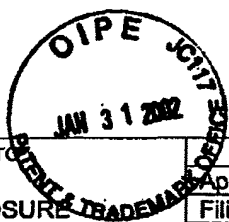
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Substitute for form 1449A-B/PTO  INFORMATION DISCLOSURE STATEMENT BY APPLICANT  (use as many sheets as necessary)	Complete if Known	
	Application Number	09/954,692
	Filing Date	September 12, 2001
	First Named Inventor	Phillip A. Patten
	Group Art Unit	Unassigned
	Examiner Name	Unassigned
	Attorney Docket Number	02-020522US

82	CM	Kikuchi et al. (2000) "An effective family shuffling method using single-stranded DNA." <i>Gene</i> 243:133-137	
	CN	Kishchenko et al. (1997) "Shuffling of structural elements in filamentous bacteriophages." <i>Proteins</i> 27(3):405-409	
	CO	Kuchner et al. (1997) "Directed evolution of enzyme catalyst." <i>Trends Biotechnol</i> 15(12):523-530	
	CP	Laffler et al. (1993) "The ligase chain reaction in DNA based diagnosis." <i>Ann Biol Clin</i> 51(9):821-826	
	CQ	Lee (1996) "Ligase 5 chain reactio." <i>Biologicals</i> 24(3):197-199	
	CR	Long et al. (1995) "Intron phase correlations and the evolution of the intron/exon structure of genes." <i>Proc Natl Acad Sci USA</i> 92(26):12495-12499	
	CS	Matsumura et al. (1996) "DNA shuffling brightens prospects for GFP." <i>Nat Biotechnol</i> 14(3):366	
	CT	Meijer et al. (1996) "Directed evolution of a type I antifreeze protein expressed in <i>Escherichia coli</i> with sodium chloride as selective pressure and its effect on antifreeze tolerance." <i>Protein Eng.</i> 9(11):1051-1054	
	CU	Miller et al. (1997) "Expanding the 43C9 class of catalytic antibodies using a chain-shuffling approach." <i>Bioorg Med Chem.</i> 5(3):581-590	
	CV	Moore et al. (1997) "Strategies for the in vitro evolution of protein function: enzyme evolution by random recombination of improved sequences." <i>J. Mol Biol.</i> 272(3):336-347	
	CW	Moore et al. (1996) "Directed evolution of a para-nitrobenzyl esterase for aqueous-organism solvents." <i>Nature Biotechnol</i> 14(4):458-467	
	CX	Muller-Dieckmann et al. (1995) "Substrate specificity and assembly of the catalytic center derived from two structures of ligated uridylyl kinase." <i>J. Mol. Biol.</i> 246(4):522-530	
	CT	Nakamura et al. (1996) "Two hydrophobic subunits are essential for the heme b ligation and functional assembly of complex II (succinate-ubiquinone oxidoreductase) from <i>Escherichia coli</i> ." <i>J. Biol Chem</i> 271(1):521-527	
	CZ	Nardi et al. (1997) "Duplication of the <i>prpF</i> gene and shuffling of DNA fragments on the lactose plasmid of <i>Lactococcus lactis</i> ." <i>J. Bacteriol</i> 179(13):4164-4171	
	DA	Nelson et al. (1996) "Base eversion and shuffling by DNA Methyltransferases." <i>Chem Biol</i> 3(6):419-423	
	DB	Ohlin et al. (1996) "Light chain shuffling of a high affinity antibody results in a drift in epitope recognition." <i>Mol Immunol</i> 33(1):47-56	
	DC	Patten et al. (1997) "applications of DNA shuffling to pharmaceuticals and vaccines." <i>Curr Opin Biotechnol</i> 8(6):724-733	

Examiner Signature	<i>C. E. Patten</i>	Date Considered	6-23-03
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



(Modified) PTO/SB/08A-B (10-96)  
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)	Complete if Known	
	Application Number	09/954,692
	Filing Date	September 12, 2001
	First Named Inventor	Phillip A. Patten
	Group Art Unit	Unassigned
	Examiner Name	Unassigned
	Attorney Docket Number	02-020522US

DD	Rouwendal et al. (1996) "Ligase chain reaction for site-directed in vitro mutagenesis." <i>Methods Mol Biol</i> 57:149-156	
DE	Shabarova et al. (1991) "Chemical ligation of DNA: the first non-enzymatic assembly of a biologically active gene." <i>Nucleic Acids Res.</i> 19(15):4247-4251	
DF	Shao et al. (1996) "Engineering new functions and altering existing functions." <i>Curr Opin. Struct Biol</i> 6(4):513-518	
DG	Shao et al. (1998) "Random-priming in vitro recombination: an effective tool for directed evolution." <i>Nucleic Acids Res.</i> 26(2):681-683	
DH	Shimmer et al. (1995) "Ligase chain reaction." <i>Methods Mol Biol</i> 46:269-278	
DI	Shuldner et al. (1990) "PCR-induced (ligase-free) subcloning: a rapid reliable method to subclone polymerase chain reaction (PCR) products." <i>Nucleic Acids Res.</i> 18(7):1920	
DJ	Strausberg et al. (1995) "directed evolution of a subtilisin with calcium-independent stability." <i>Biotechnology</i> 13(7):669-673	
DK	Szostak (1997) "In vitro selection and directed evolution." <i>Harvey Lect</i> 93:95-118	
DL	Tortoli et al. (1997) "Evaluation of a commercial ligase chain reaction kit (Abbott LCx) for directed detection of Mycobacterium tuberculosis in pulmonary and extrapulmonary specimens." <i>J. Clin. Microbiol.</i> 35(9):2424-2426	
DM	You et al. (1996) "Directed evolution of subtilisin E in Bacillus subtilis to enhance total activity in aqueous dimethylformamide." <i>Protein Eng.</i> 9(1):77-83	
DN	Youvan et al. <i>Nature</i> 401-410 (1992)	
DO	Zhao et al. (1996) "Strategy for the directed evolution of a peptide ligase." <i>Ann NY Acad Sci</i> 799:1-5	
DP	Zhao et al. (1997) "Functional and nonfunctional mutations distinguished by random recombination of homologous genes." <i>PNAS USA</i> 94(15):7997-8000	
DQ	Zhao et al. (1997) "Optimization of DNA shuffling for high fidelity recombination." <i>Nucleic Acids Res.</i> 25(6):1307-1308	
DR	STATEMENT OF GROUNDS AND PARTICULARS in the Matter of Australian Patent Application No. 732,146. October 12, 2001.	
DS	European Search Report for Application No. 97953571.3	
DT	European Search Report for Application No. 01202349.5	
DU	European Search Report for Application No. 01202350.3	

Examiner Signature	<i>S. Zolner</i>	Date Considered	6-23-03
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

9-12-2001

(Modified) PTO/SB/08A-B (10-96)  
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <b>COPY FROM PARENT</b> (use as many sheets as necessary)	Complete if Known	
	Application Number	<del>09/717419</del> <i>Unassigned</i>
	Filing Date	<del>November 18, 2000</del> <i>Unassigned</i>
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	S. Zitomer
	Attorney Docket Number	<del>02-020520US</del> <i>02-020522US</i>

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
<i>[Signature]</i>	AA	5,427,930		Birkenmeyer et al.	06-27-1995	
	AB	5,792,607		Backman et al.	08-11-1998	

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09/12/01

FOREIGN PATENT DOCUMENTS								
Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T

Examiner Signature	<i>S. Zitomer</i>	Date Considered	<i>6-23-03</i>
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<b>Substitute for form 1449A-B/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <b>COPY FROM PARENT</b>  (use as many sheets as necessary)	<b>Complete if Known</b>	
	Application Number	<del>09/717419</del> <b>Unassigned</b>
	Filing Date	<del>November 18, 2000</del> <b>Unassigned</b>
	First Named Inventor	<b>Phillip A. Patten</b>
	Group Art Unit	<b>1634</b>
	Examiner Name	<b>S. Zitomer</b>
	Attorney Docket Number	<del>02-020520US</del> <b>02-020522US</b>

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
	AA	5,427,930		Birkenmeyer et al.	06-27-1995	
	AB	5,792,607		Backman et al.	08-11-1998	

J1050 U. S. PTO  
09/984592

09/12/01

FOREIGN PATENT DOCUMENTS								
Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (If known)				

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T

Examiner Signature		Date Considered	
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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**COPY FROM PARENT**  
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Complete if Known

Application Number 08/769,062 Unassigned  
Filing Date December 18, 1996 Unassigned  
First Named Inventor Phillip A. Patten  
Group Art Unit 1634  
Examiner Name Zitomer, S.  
Attorney Docket Number 02-020500US 02-020522US

### U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	U.S. Patent Document Number	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
SE	AA	5,976,862		Kauffman et al.	11/02/1999	

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09/954692  
09/12/01

### FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Office	Foreign Patent Document Number	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T

### OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T

Examiner Signature	<u>S. Zitomer</u>	Date Considered	<u>6-23-03</u>
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

**COPY FROM PARENT**  
(use as many sheets as needed)

Application Number ~~08/769,002~~ *unassigned*  
Filing Date ~~December 10, 1996~~ *unassigned*  
First Named Inventor **Phillip A. Patten**  
Group Art Unit **1634**  
Examiner Name **Zitomer, S.**  
Attorney Docket Number ~~02-02050009~~ *02-020522US*

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	U.S. Patent Document Number	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
<i>SP</i>	AA	5,939,250		Short	08/17/1999	

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09/954692  
09/12/01

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Foreign Patent Document Office	Number	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

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Examiner Signature	<i>S. Zitomer</i>	Date Considered	6-23-03
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Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

Complete if Known

Application Number 08/769,062 Unassigned  
Filing Date December 18, 1996 Unassigned  
First Named Inventor Phillip A. Patten  
Group Art Unit 1634  
Examiner Name Zitomer, S.  
Attorney Docket Number 02-020500US-02-020522US

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U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code (if known)			
<u>SZ</u>	AA	4,683,202		Mullis	07-28-1987	
	AB	4,800,159		Mullis et al.	01-24-1989	
	AC	4,965,188		Mullis et al.	10-23-1990	
	AD	5,023,171		Ho	06-11-1991	
	AE	5,176,995		Sninsky et al.	01-05-1993	
	AF	5,187,083		Mullis	02-16-1993	
	AG	5,234,824		Mullis	08-10-1993	
	AH	5,502,167		Waldmann	03-26-1996	
	AI	5,556,772		Sorge et al.	09-17-1996	
	AJ	5,714,316		Weiner et al.	02-03-1998	
	AK	5,851,813		Desrosiers	12-22-1998	
	AL	5,858,725		Crowe et al.	01-12-1999	

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09/954692

09/12/01

FOREIGN PATENT DOCUMENTS

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		Office	Number	Kind Code (if known)				
<u>SZ</u>	AM	WO	90/14430		Scripps Clinic & Research Found.	11-29-1990		
	AN	WO	91/06570		Univ. of Melbourne	05-16-1991		
	AO	WO	92/07075		Wellcome Foundation Ltd.	04-30-1992		
	AP	WO	93/02191		Wellcome Foundation Ltd.	02-04-1993		
	AQ	WO	93/06213		MRC	04-01-1993		
	AR	WO	93/11237		Wellcome Foundation Ltd.	06-10-1993		
	AS	WO	93/15208		Genzyme Ltd.	08-05-1993		
	AT	WO	93/16192		Wellcome Foundation Ltd.	08-19-1993		

Examiner  
Signature

S. Zitomer

Date  
Considered

6-23-03

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A-B/PTO

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**COPY FROM PARENT**  
(use as many sheets as necessary)

Complete if Known

Application Number	<del>08/769,862</del> <i>Unassigned</i>
Filing Date	<del>December 18, 1996</del> <i>Unassigned</i>
First Named Inventor	Phillip A. Patten
Group Art Unit	1634
Examiner Name	Zitomer, S.
Attorney Docket Number	<del>02-020500US</del> <i>02-020522US</i>

<i>SE</i>	AU	WO	93/18141	Biogen, Inc.	09-16-1993
	AV	WO	93/25237	City of Hope	12-23-1993
	AW	WO	94/03596	Univ. of Hawaii	02-17-1994
	AX	WO	94/09817	City of Hope	05-11-1994
	AY	WO	94/13804	Cambridge Antibody Tech. Ltd. Medical Res. Council	06-23-1994

## OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T
<i>SE</i>	AZ	Delgrave et al., (1993) Bio/Technology <u>11</u> :1548-1552	
	BA	Goldman, E.R. and Youvan D.C., (1992) Bio/Technology <u>10</u> :1557-1561	
	BB	Joyce, G.F., (1992) Scientific American, December, 90-97	
	BC	Bock, L.C., et al., (1992) Nature <u>355</u> :564-566	
	BD	Scott, J.K. and Smith G.P., (1990) Science <u>249</u> :386-390	
	BE	Cwirla, S.E. et al., (1990) Proc Nat'l Acad Sci USA <u>87</u> :6378-6382	
	BF	McCafferty, J. et al., (1990) Nature <u>348</u> :552-554	
	BG	Cull, M.G. et al., (1992) Proc Natl Acad Sci USA <u>89</u> :1865-1869	
	BH	Nissim et al., (1994) ENBO J <u>13</u> :692-698	
	BI	Krishnan et al., (1991) Nucleic Acids Res. <u>19</u> (22):6177-6182	
	BJ	Klug et al., (1991) Nucleic Acids Res. <u>19</u> (10):2793	
	BK	Daugherty et al., (1991) Nucleic Acids Res. <u>19</u> :2471-2476	
	BL	Yolov et al. (1990) Nucleic Acids Res. <u>18</u> :3983-3986	
	BM	Jayaraman et al. (1991) Proc Natl Acad Sci USA <u>88</u> :4084-4088	
	BN	Mori, M and Schmelzer, C. (1990) Nucleic Acids Res. <u>18</u> (22):6545-6551	
	BO	Mullis et al., (1986) Cold Harbor Spring Symposia on Quantitative Biology <u>51</u> :263-273	
	BP	Sikorski et al., (1991) Methods in Enzymology <u>194</u> :302-318	
	BQ	Mullis et al., (1987) Methods in Enzymology <u>155</u> :335-350	

Examiner Signature	<i>S. Zitomer</i>	Date Considered	<i>6-23-03</i>
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A-B/PTO

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INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

**COPY FROM PARENT**  
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Application Number	<del>00769,002</del> <i>unassigned</i>
Filing Date	<del>December 10, 1990</del> <i>unassigned</i>
First Named Inventor	Phillip A. Patten
Group Art Unit	1634
Examiner Name	Zitomer, S.
Attorney Docket Number	<del>02-020500US</del> <i>02-020522US</i>

<i>SE</i>	BR	Scharf et al., (1986) Science <u>233</u> :1076-1078
	BS	Saiki et al., (1988) Science <u>239</u> :487-491
	BT	Saiki et al., (1986) Nature <u>324</u> (13):163-166
	BU	Saiki et al., (1985) Science <u>230</u> :1350-1354
	BV	Saiki et al., (1988) New Eng J Med <u>319</u> (9):537-541
	BW	Crameri et al., (1993) Nucleic Acids Res. <u>21</u> (18):4410
	BX	Villareal XC et al., (1991) Anal Biochem. <u>197</u> (2):362-367
	BY	Jones et al., (1991) <i>Biotechniques</i> <u>10</u> (1):62-66
	BZ	Weissenhorn et al., (1991) Gene <u>106</u> (2):273-277
	CA	Majumder et al., (1992) Gene <u>110</u> (1):89-94
	CB	Yao et al., (1992) PCR Methods Appl <u>1</u> (3):205-207
	CC	Atreya et al (1992) Plant Mol Biol. <u>19</u> (3):517-522
	CD	Zoller et al., (1992) Curr Opin Biotechnol. <u>3</u> (4):348-354
	CE	Heda et al., (1992) Nucleic Acid Res. <u>20</u> (19):5241-5242
	CF	Horton et al., (1993) Methods Enzymol <u>217</u> :270-279
	CG	The whys and wherefores of DNA amplification. Biotechnology (NY). 1993 Aug; <u>11</u> (8):940-942
	CH	Clackson et al., (1991) Nature <u>352</u> (6336):624-628
	CI	Smith et al., (1993) PCR Methods Appl. <u>2</u> (3):253-257
	CJ	Weisberg et al., (1993) <i>Biotechniques</i> <u>15</u> (1):68-70, 72-4, 76.
	CK	Marks, et al., (1991) J Mol Biol <u>222</u> (3):581-597
	CL	Harlow et al., (1994) Methods Mol Biol <u>31</u> :87-96
	CM	Yon et al., (1989) Nucleic Acids Res. <u>17</u> (12):4895
	CN	Ho et al., (1990) DNA & Prot. Engineer. Tech. 2:50-55
	CO	Horton et al., (1990) <i>Biotechniques</i> <u>8</u> (5):528-535
	CP	Osuna et al. (1991) Gene <u>106</u> :7-12
	CQ	Dube et al. (1991) Biochemistry <u>30</u> (51):11760-7
	CR	Ghosh et al., (1991) Biochem <u>30</u> :11767-74
	CS	Paabo et al., (1990) J Biol Chem <u>265</u> (8):4718-4721

Examiner Signature	<i>S. Zitomer</i>	Date Considered	<i>6-23-03</i>
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<b>Substitut for form 1449A-B/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <b>COPY FROM PARENT</b> <small>(use as many sheets as necessary)</small>	<b>Complete if Known</b>	
	Application Number	<del>08/769,062</del> <b>unassigned</b>
	Filing Date	<del>December 18, 1996</del> <b>unassigned</b>
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
Attorney Docket Number		<del>02-020500US</del> <b>02-020522US</b>

SE 1	CT	Sambrook et al., (1989) Molecular cloning. A Laboratory Manual, 2 <sup>nd</sup> Edition, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
	CU	Opposition by Diversa Corporation filed in the matter of Australian Application 703264 Affymax Technology NV, September 23, 1999.

Examiner Signature	S. Zitomer	Date Considered	6-23-03
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(Modified) PTO/SB/08A-B (10-96)  
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <b>COPY FROM PARENT</b> (use as many sheets as necessary)	Complete if Known	
	Application Number	<del>08/763,062</del> <i>Unassigned</i>
	Filing Date	<del>December 18, 1996</del> <i>Unassigned</i>
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
Attorney Docket Number		<del>02-020500US</del> <i>02-020522US</i>

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code (if known)			
<i>SE</i>	CV	5,958,672		Short	09-28-1999	
<i>l</i>	CW	5,965,408		Short	10-12-1999	

U.S. PTO  
 09/25/01  
 09/12/01

FOREIGN PATENT DOCUMENTS								
Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T

Examiner Signature	<i>S. Zitomer</i>	Date Considered	<i>6-23-03</i>
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rough 10/31/99. OMB 0651-0031

**Complete if Known**

Application Number	<del>08769,992</del> <i>unassigned</i>
Filing Date	<del>December 18, 1996</del> <i>unassigned</i>
First Named Inventor	Phillip A. Patten
Group Art Unit	1634
Examiner Name	Zitomer, S.
Attorney Docket Number	<del>02-020500US</del> <i>02-020522US</i>

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## U.S. PATENT DOCUMENTS

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**FOREIGN PATENT DOCUMENTS**

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Substitute for form 1449A-B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <b>COPY FROM PARENT</b> (use as many sheets as necessary)	Complete if Known	
	Application Number	<del>00/789,062</del> <i>unassigned</i>
	Filing Date	<del>December 18, 1996</del> <i>unassigned</i>
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
Attorney Docket Number		<del>02-020500US</del> <i>02-020522US</i>


OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
<i>[Signature]</i>		JONES, ET AL., DNA Mutagenesis and Recombination. Nature. April 19, 1990, pages 793-794, Vol. 344,	
		PRODROMOU et al., PROTOCOL: Recursive PCR: a novel technique for total gene synthesis, Protein Engineering, 1992, pages 827-829, Vol. 5, No. 8. Oxford University Press,	
		BENDIXEN, et al. A Yeast Mating-Selection Scheme for Detection of Protein-Protein Interactions. Nucleic Acids Research, 1994, pages 1778-1779, Vol. 22, No. 9,	
		MANDECKI, et al, FokI method of gene synthesis (Recombinant DNA; oligodeoxynucleotide; bridge mutagenesis; cloning; gene assembly; HIV) Gene. 1988. Pages 101-107, Vol. 68, Elsevier Science Publishers	
		REISKOFSKI et al., Polymerase Chain Reaction (PCR) Techniques for Site-Directed Mutagenesis. Biotech. Adv. 1992, pages 535-547, Vol. 10, Pergamon Press, Ltd, Great Britain	

Examiner Signature	<i>S. Zitomer</i>	Date Considered	<i>6-23-03</i>
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<b>FORM PTO-1449 (Modified)</b>			Attorney Docket No.: 18097-11-01-015205		Application No.: 08/621,855	
<b>LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)</b>			Applicant: Stemmer et al.		Group: 1634	
			Filing Date: March 25, 1996			
Reference Designation			U.S. PATENT DOCUMENTS			Page 1
Examiner Initial	Document No.	Date	Name	Class	Sub-class	Filing Date (If Appropriate)
FOREIGN PATENT DOCUMENTS						
	Document No.	Date	Country	Class	Sub-class	Translated (Yes/No)
AA	WO 95/17413	6/29/95	PCT	1	1	
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)						
EXAMINER <i>S. Z. Yoner</i>			DATE CONSIDERED <i>6-23-03</i>			

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09/95/1692  
09/12/01



<b>FORM PTO-1449 (Modified)</b> <b>LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)</b>			Attorney Docket No.: 48097-1-2-025220 Applicant: Stemmer et al. Filing Date: March 25, 1996		Application No.: 08/621,859- <i>massyack</i> Group: 1634	
<b>Reference Designation</b>			<b>U.S. PATENT DOCUMENTS</b>			Page: 1
Examiner Initial	Document No.	Date	Name	Class	Sub-class	Filing Date (If Appropriate)
<i>SE</i> AA	5,824,485	10/20/98	Thompson et al.			
AB	5,783,431	7/21/98	Peterson et al.			
AC	5,629,179	5/13/97	Mierendorf et al.			
<b>FOREIGN PATENT DOCUMENTS</b>						
	Document No.	Date	Country	Class	Sub-class	Translation (Yes/No)
<i>SE</i> AD	WO 98/42832	10/1/98	PCT			
AE	WO 98/41653	9/24/98	PCT			
AF	WO 98/41623	9/24/98	PCT			
AG	WO 98/41622	9/24/98	PCT			
AH	WO 98/28416	7/2/98	PCT			
AI	WO 98/01581	1/15/98	PCT			
AJ	WO 97/35966	10/2/97	PCT			
AK	WO 97/25410	7/17/97	PCT			
AL	WO 97/20078	6/5/97	PCT			
<b>OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)</b>						
<i>SE</i> AM	Fisch et al., "A Strategy Of Exon Shuffling For Making Large Peptide Repertoires Displayed On Filamentous Bacteriophage", <u>Proc Natl Acad Sci USA</u> , 93(15):7761-7766 (1996)					
AN	Marton et al., "DNA Nicking Favors PCR Recombination", <u>Nucleic Acids Res.</u> , 19(9):2423-2426 (1991)					
AO	Winter et al., "Making Antibodies By Phage Display Technology", <u>Ann. Rev. Immunol.</u> , 12:433-455 (1994)					
AP	Greener et al., "An Efficient Random Mutagenesis Technique Using An E. coli Mutator Strain", <u>Methods in Molecular Biology</u> , 57:375-385 (1995)					
+-						
<b>EXAMINER</b> <i>S. Stomen</i>			<b>DATE CONSIDERED</b> <i>6-23-03</i>			

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

## FORM PTO-1449 (Modified)

LIST OF PATENTS AND PUBLICATIONS FOR  
APPLICANT'S INFORMATION DISCLOSURE  
STATEMENT (Use several sheets if necessary)

Attorney Docket No.: 480972-0052005 Application No.: 08-621-57

Applicant: Stemmer et al.

Filing Date: March 25, 1996

Group: 1634

unassigned

## Reference Designation

## U.S. PATENT DOCUMENTS

Page: 1

Examiner Initial	Document No.	Date	Name	Class	Sub-class	Filing Date (IPAB)
SE AA	5,316,935	05/31/94	Arnold et al.			
AB	5,834,252	11/10/98	Stemmer et al.			
AC	5,837,458	11/17/98	Minshull et al.			

## FOREIGN PATENT DOCUMENTS

	Document No.	Date	Country	Class	Sub-class	Filing Date (Yes/No)
SE AD	WO 91/07506	05/30/91	PCT			
AE	WO 91/15581	10/17/91	PCT			
AF	WO 91/16427	10/31/91	PCT			
AG	WO 95/22625	08/24/95	PCT			
AH	WO 96/33207	10/24/96	PCT			

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## OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

SE AI	Balint et al., "Antibody Engineering By Parsimonious Mutagenesis", <u>Gene</u> , 137(1):109-118 (1993)
AJ	Bartel et al., "Isolation of New Ribozymes From a Large Pool of Random Sequences", <u>Science</u> , 261:1411-1413 (1993)
AK	Cramer et al., "Combinatorial Multiple Cassette Mutagenesis Creates All The Permutations Of Mutant And Wild-Type Sequences", <u>Biotechniques</u> , 18(2):194-196 (1995)
AL	Cramer et al., "Improved Green Fluorescent Protein By Molecular Evolution Using DNA Shuffling", <u>Nat. Biotechnol.</u> , 14(3):315-319 (1996) (previously submitted)
AM	Cramer et al., "Construction And Evolution Of Antibody-Phage Libraries By DNA Shuffling", <u>Nat. Med.</u> , 2(1):100-102 (1996) (previously submitted)
AN	Cramer et al., "Molecular Evolution Of An Arsenate Detoxification Pathway By DNA Shuffling", <u>Nat. Biotechnol.</u> , 15(5):436-438 (1997)
AO	Cramer et al., "DNA Shuffling Of A Family Of Genes From Diverse Species Accelerates Directed Evolution", <u>Nature</u> , 391(3664):288-291 (1998)
AP	Gates et al., "Affinity Selective Isolation Of Ligands From Peptide Libraries Through Display On A Lac Repressor 'Headpiece Dimer'", <u>J. Mol. Biol.</u> , 255(3):373-386 (1996) (previously submitted)
AQ	Gram et al., "In Vitro Selection And Affinity Maturation Of Antibodies From a Naïve Combinatorial Immunoglobulin Library", <u>Proc. Natl. Acad. Sci. USA</u> , 89:3576-3580 (1992)
AR	Near, "Gene Conversion Of Immunoglobulin Variable Regions In Mutagenesis Cassettes By Replacement PCR Mutagenesis", <u>Biotechniques</u> , 12(1):88-97 (1992)
AS	Perlak, "Single Step Large Scale Site-Directed In Vitro Mutagenesis Using Multiple Oligonucleotides", <u>Nucleic Acids Res.</u> , 18(24):7457-7458 (1990)
AT	Stemmer, "Searching Sequence Space", <u>Biotechnology</u> , 13:549-553 (1995) (previously submitted)
AU	Stemmer et al., "Single-Step Assembly Of A Gene And Entire Plasmid From Large Numbers Of Oligodeoxyribonucleotides", <u>Gene</u> , 164(1):49-53 (1995) (previously submitted)
AV	Stemmer, "The Evolution of Molecular Computation", <u>Science</u> , 270(5241):1510 (1995) (previously submitted)
AW	Stemmer, "Sexual PCR and Assembly PCR" <u>Encyclopedia Mol. Biol.</u> , VCH Publishers, New York, pp. 447-457 (1996)
AX	Weber et al., "Formation of Genes Coding for Hybrid Proteins by Recombination Between Related, Cloned Genes in E. Coli", <u>Nucleic Acids Research</u> , 11(16):5661-5669 (1983)
AY	Weisberg et al., "Simultaneous Mutagenesis Of Multiple Sites: Application Of The Ligase Chain Reaction Using PCR Products Instead Of Oligonucleotides", <u>BioTechniques</u> , 15(1):68-76 (1993)

FORM PTO-1449 (Modified)		Attorney Docket No.: <del>1809-CA-020220</del> Application No.: <del>08/621,857</del>	
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: Stemmer et al. <i>WAS</i>	
		Filing Date: March 25, 1996	Group: 1634
<i>SZ</i> AZ	Zhang et al., "Directed Evolution Of A Fucosidase From A Galactosidase By DNA Shuffling And Screening", <i>Proc. Natl. Acad. Sci. USA</i> , 94(9):4504-4509 (1997)		
BA	Zhao et al., "Molecular Evolution by Staggered Extension Process (StEP) In Vitro Recombination", <i>Nature Biotech.</i> , 16:258-261 (1998)		
EXAMINER <i>S. Z. Lerner</i>		DATE CONSIDERED <i>6-23-03</i>	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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09/954692  
09/12/01

## FORM PTO-1449 (Modified)

LIST OF PATENTS AND PUBLICATIONS FOR  
APPLICANT'S INFORMATION DISCLOSURE  
STATEMENT (Use several sheets if necessary)

Attorney Docket No.: 02-020522US

Application No.: 08/621,833

unassigned

Applicant: Stemmer et al.

Filing Date: March 25, 1996

Group: 1634

Page: 1

## U.S. PATENT DOCUMENTS

Reference Designation		Name		Class	Sub-class	Filing Date (If Applicable)
Examiner Initial	Document No.	Date				
AA	5,830,721	11/03/98	Stemmer et al.			
AB	5,811,238	09/22/98	Stemmer et al.			
AC	5,763,192	06/09/98	Kauffman et al.			
AD	5,723,323	03/03/98	Kauffman et al.			
AE	5,814,476	09/29/98	Kauffman et al.			
AF	5,817,483	10/06/98	Kauffman et al.			
AG	5,824,514	10/20/98	Kauffman et al.			
AH						
AI						
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## FOREIGN PATENT DOCUMENTS

Document No.	Date	Country	Class	Sub-class	Translation (Yes/No)

## OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER: S. E. Forner	DATE CONSIDERED 6-23-03

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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<b>FORM PTO-1449 (Modified)</b>  <b>LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT</b> (Use several sheets if necessary)		<b>Attorney Docket</b> <del>018097-014612US</del> <del>02-0252225</del> <b>Applicant:</b> St mmer and Cramer		<b>Serial No.:</b> <del>08/621,859</del> <i>unassigned</i>	
		<b>Filing Date:</b> <del>March 25, 1996</del> <i>unassigned</i>		<b>Group:</b> 3807	

Ref erence Designation		U.S. PATENT DOCUMENTS				
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<input type="checkbox"/> AB	5,043,272	08/27/91	Hartley			
<input type="checkbox"/> AC	5,093,257	03/03/92	Gray			
<input type="checkbox"/> AD	5,223,408	06/29/93	Goeddel et al.			
<input type="checkbox"/> AE	5,279,952	01/18/94	Wu			
<input type="checkbox"/> AF	5,360,728	12/01/94	Prasher			
<input type="checkbox"/> AG	5,521,072	05/28/96	Khosla et al			
<input type="checkbox"/> AH	5,541,309	07/30/96	Prasher			
<input type="checkbox"/> AI	5,605,793	02/25/97	Stemmer			
<input type="checkbox"/> AJ	5,652,116	07/29/97	Grandi et al.			

FOREIGN PATENT DOCUMENTS						
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<input type="checkbox"/> AM	WO 91/01087	02/07/91	PCT			
<input type="checkbox"/> AN	WO 95/17413	06/29/95	PCT			
<input type="checkbox"/> AO	WO 97/07205	02/27/97	PCT			

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)	
<input checked="" type="checkbox"/> AP	Arkin et al., "An algorithm for protein engineering: Stimulation of recursive ensemble mutagenesis" <u>Proc. Natl. Acad. Sci. USA</u> 89:7811-7815 (1992).
<input type="checkbox"/> AQ	Beaudry et al., "Directed evolution of an RNA enzyme" <u>Science</u> 257:635-641 (1992).
<input type="checkbox"/> AR	Berger et al. "Phoenix mutagenesis: One-step reassembly of multiply cleaved plasmids with mixtures of mutant and wild-type fragments" <u>Anal. Biochem.</u> 214:571-579 (1993).

EXAMINER. <i>S. Stomer</i>	DATE CONSIDERED <i>6-23-0</i>
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 (Modified)		Attorney Docket <del>018097-014612US</del> <u>02-020522US</u>	Serial No.: <del>007621,859</del> <u>unassigned</u>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: Stemmer and Cramer	
		Filing Date: <u>unassigned</u> <del>March 25, 1996</del>	Group: 1807
Reference Designations (Including Author, Title, Date, Pertinent Pages, Etc.)			
Examiner Initial			
<u>SZ</u> AS	Berkhout et al. "In vivo selection of randomly mutated retroviral genomes" <u>Nucleic Acids Res.</u> 21:5020-5023 (1993).		
AT	Cadwell et al. "Randomization of genes by PCR mutagenesis" <u>PCR Methods and Applications</u> 2:28-33 (1992). ( <u>previously submitted</u> )		
AU	Calogero et al. "In vivo recombination and the production of hybrid genes" <u>Microbiol. Lett.</u> 97:41-44 (1992).		
AV	Caren et al. "Efficient sampling of protein sequence space for multiple mutants" <u>Biotechnology</u> 12:517-520 (1994).		
AW	Delagrave et al. "Recursive ensemble mutagenesis" <u>Protein Engineering</u> 6:327-331 (1993).		
AX	Feinberg and Vogelstein "A technique for radiolabeling DNA restriction endonuclease fragments to high specific activity" <u>Anal. Biochem.</u> 132:6-13 (1983).		
AY	Heim et al. "Wavelength mutations and postranslational autooxidation of green fluorescent protein" <u>Proc. Natl. Acad. Sci. USA</u> 91:12501-12504 (1994).		
AZ	Hermes et al. "Searching sequence space by definably random mutagenesis: Improving the catalytic potency of an enzyme" <u>Proc. Natl. Acad. Sci. USA</u> 87:696-700 (1990).		
AAA	Ho et al. "Site-directed mutagenesis by overlap extension using the polymerase chain reaction" <u>Gene</u> 77:51-59 (1989).		
AAB	Horton et al. "Engineering hybrid genes without the use of restriction enzymes: Gene splicing by overlap extension" <u>Gene</u> 77:61-68 (1989).		
AAC	Jones et al. "Recombinant circle PCR and recombination PCR for site-specific mutagenesis without PCR product purification" <u>BioTechniques</u> 12:528-530, 532, 534-535 (1992).		
AAD	Kim et al. "Human immunodeficiency virus reverse transcriptase" <u>J. Biol. Chem.</u> 271:4872-4878 (1996).		
AAE	Leung et al. "A method for random mutagenesis of a defined DNA segment using a modified polymerase chain reaction" <u>Techniques</u> 1:11-15 (1989).		
EXAMINER <u>S. Stoner</u>	DATE CONSIDERED <u>6-28-93</u>		

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MP: 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

COPY FROM PARENT

FORM PTO-1449 (Modified)		Attorney Docket: 018097-014612US	Serial No.: 08/621,839 <i>Unassigned</i>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: Stemmer and Cramer	
		Filing Date: <i>Unassigned</i> March 25, 1996	Group: 1807
Reference Designations (Including Author, Title, Date, Pertinent Pages, Etc.)			
Examiner Initial			
<i>SA</i> AAF	Marks et al. "By-passing immunization: Building high affinity human antibodies by chain shuffling" <i>Bio/Technology</i> 10:779-782 (1992).		
AAG	Meyerhans et al. "DNA recombination using PCR" <i>Nucleic Acids Res.</i> 18:1687-1691 (1990).		
AAH	Oliphant et al. "Cloning of random-sequence oligodeoxynucleotides" <i>Gene</i> 44:177-183 (1988).		
AAI	Pharmacia Catalog pp. 70-71 (1993 Edition).		
AAJ	Pompon et al. "Protein engineering by cDNA recombination in yeasts: Shuffling of mammalian cytochrome P-450 functions" <i>Gene</i> 83:15-24 (1989).		
AAK	Reidhaar-Olson et al. "Combinatorial cassette mutagenesis as a probe of the informational content of protein sequences" <i>Science</i> 241:53-57 (1988).		
AAL	Rao et al. "Recombination and polymerase error facilitate restoration of infectivity in brome mosaic virus" <i>J. Virol.</i> 67:969-979 (1993).		
AAM	Stemmer et al. "Selection of an active single chain Fv antibody from a protein linker library prepared by enzymatic inverse PCR" <i>BioTechniques</i> 14:256-265 (1992).		
AAN	Stemmer et al. "Rapid evolution of a protein in vitro by DNA shuffling" <i>Nature</i> 370:389-391 (1994). ( <i>previously submitted</i> )		
AAO	Stemmer et al. "DNA shuffling by random fragmentation and reassembly: In vitro recombination for molecular evolution" <i>Proc. Natl. Acad. Sci. USA</i> 91:10747-10751 (1994). ( <i>previously submitted</i> )		
EXAMINER <i>S. Z. Jones</i>	DATE CONSIDERED <i>6-23-03</i>		

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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FORM PTO-1449 (Modified)		Attorney Docket No. <del>18097-020500-02-020521</del> <del>001769,062</del> <i>unassigned</i>		Serial No.:		
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: PHILLIP A. PATTEN et al.				
		Filing Date: <del>12/18/86</del> <i>unassigned</i>		Group: Unknown		
Reference Designation		U.S. PATENT DOCUMENTS				
Examiner Initial	Document No.	Date	Name	Class	Sub-class	Filing Date (If Appropriate)
<i>SE</i> AA	3,817,837	06/18/74	Rubenstein et al.	195		
AB	3,850,752	11/26/74	Schuurs et al.	G01N 31	14	
AC	3,939,350	02/17/76	Kronick et al.	G01T 1	20	
AD	3,996,345	12/07/76	Ullman et al.	G01N 21	00	
AE	4,275,149	06/23/81	Litman et al.	B12Q 1	66	
AF	4,277,437	07/07/81	Maggio	G01N 33	54	
AG	4,366,241	12/28/82	Tom et al.	G01N 33	54	
AH						
AI						
AJ						
AK						
AL						
FOREIGN PATENT DOCUMENTS						
	Document No.	Date	Country	Class	Sub-class	Translation (yes/no)
<i>SE</i> AM	WO 94/12305	06/09/94	PCT	B23B 51	00	Yes
AN	WO 95/11995	05/04/95	PCT	C12Q 1	68	No
AO						
AP						
AQ						
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)						
<i>SE</i> AR	An, S. et al., "Cloning, sequencing and tissue distribution of two related G protein-coupled receptor candidates expressed prominently in human lung tissue," <u>FEBS Letts.</u> 375:121-124 (1995)					
<i>SE</i> AS	Andersson D.I. et al., "Muller's ratchet decreases fitness of a DNA-based microbe," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 93:906-907 (1996)					
AT	Barak, L.S. et al., "The Conserved Seven-Transmembrane Sequence NP(X) <sub>3</sub> Y of the G-Protein-Coupled Receptor Superfamily Regulates Multiple Properties of the $\beta_1$ -Adrenergic Receptor," <u>Biochemistry</u> 34:15407-15414 (1995)					
AU	Barnes, W.M., "PCR amplification of up to 35-kb DNA with high fidelity and high yield from $\lambda$ bacteriophage templates," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 91:2216-2220 (1994)					
AV	Barry, M.A. et al., "Toward cell-targeting gene therapy vectors: Selection of cell-binding peptides from random peptid-presenting phage libraries," <u>Nature Med.</u> 2(3):299-305 (1996)					

COPY FROM PARENT



FORM PTO-1449 (Modified)		Attorney Docket No. 18097-020500 <b>02-02052245</b>	Serial No.: 08/769,062 <b>unassigned</b>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: PHILLIP A. PATTEN et al.	
		Filing Date: <b>12/18/96</b> <b>unassigned</b>	Group: Unknown

<input checked="" type="checkbox"/> AW	Benka, M.L. et al., "The thrombin receptor in human platelets is coupled to GTP binding protein of the G $\alpha_q$ family," <u>FEBS Letts.</u> 363:49-52 (1995)
<input type="checkbox"/> AX	Berek, C. et al., "Mutation Drift and Repertoire Shift in the Maturation of Immune Response," <u>Immunological Reviews</u> 96:23-41 (1987)
<input type="checkbox"/> AY	Bird, R.E. et al., "Single-Chain Antigen-Binding Proteins," <u>Science</u> 242:423-425 (1988)
<input type="checkbox"/> AZ	Broach, J.R. et al., "High-throughput screening for drug discovery," <u>Nature Supp.</u> 384:14-16 (1996)
<input type="checkbox"/> BA	Cadwell, R.C. et al., "Randomization of Genes by PCR Mutagenesis," <u>PCR Methods and Applications</u> 2:28-33 (1992)
<input type="checkbox"/> BB	Cantwell, C.A. et al., "Cloning and expression of a hybrid <i>Streptomyces clavuligerus</i> cef E gene in <i>Penicillium chrysogenum</i> ," <u>Curr. Genet.</u> 17:213-221 (1990)
<input type="checkbox"/> BC	Chen, C.C.H. et al., "Structure of a Phosphonate-inhibited $\beta$ -Lactamase, An Analog of the Tetrahedral Transition State/Intermediate of $\beta$ -Lactam Hydrolysis," <u>J. Mol. Biol.</u> 234:165-178 (1993)
<input type="checkbox"/> BD	Chen, K. et al., "Tuning the activity of an enzyme for unusual environments; Sequential random mutagenesis of subtilisin E for catalysis in dimethylformamide," <u>Proc. Natl. Acad. Sci. U.S.A.</u> , 90:5618-5622 (1993)
<input type="checkbox"/> BE	Chong, S. et al., "Protein Splicing Involving the <i>Saccharomyces cerevisiae</i> VMA Intein," <u>J. Biol. Chem.</u> 271(36):22159-22168 (1996)
<input type="checkbox"/> BF	Courtney, L.P. et al., "An anti-IL-2 antibody increases serum half-life and improves anti-tumor efficacy of human recombinant interleukin-2," <u>Immunopharmacology</u> 28:223-232 (1994)
<input type="checkbox"/> BG	Cramer, A. et al., "Construction and evolution of antibody-phage libraries by DNA shuffling," <u>Nature Medicine</u> 2(1):100-102 (1996)
<input type="checkbox"/> BH	Cramer, A. et al., "Improved Green Fluorescent Protein by Molecular Evolution Using DNA Shuffling," <u>Nature Biotech.</u> 14:315-319 (1996)
<input type="checkbox"/> BI	Dangl, J.L. et al., "Rapid Isolation of Cloned Isotype Switch variants Using Fluorescence Activated Cell Sorting," <u>Cytometry</u> 2(6):395-401 (1982)
<input type="checkbox"/> BJ	Dierick, H. et al., "Incorporation of DITP or 7-deaza dGTP during PCR improves sequencing of the product," <u>Nucl. Acids Res.</u> 21(18):4427-4428 (1993)
<input type="checkbox"/> BK	Duncan, R. et al., "Polymer Conjugates, Pharmacokinetic Considerations for Design and Development," <u>Clin. Pharmacokinet.</u> 27(4):290-306 (1994)
<input type="checkbox"/> BL	Dunn, I.S., "Assembly of Functional Bacteriophage Lambda Virions Incorporating C-Terminal Peptide or Protein Fusions with the Major Tail Protein," <u>J. Mol. Biol.</u> 248:497-506 (1995)
<input type="checkbox"/> BM	Fish, E.N. et al., "Human Leukocyte Interferon Subtypes have Different Antiproliferative and Antiviral Activities on Human Cells," <u>Biochem. Biophys. Res. Commun.</u> 112(2):537-546 (1983)
<input type="checkbox"/> BN	Gascoigne, N.R.J. et al., "Secretion of a chimeric T-cell receptor-immunoglobulin protein," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 84:2936-2940 (1987)
<input type="checkbox"/> BO	Gates, C.M. et al., "Affinity Selective Isolation of Ligands from Peptide Libraries Through Display on a lac Repressor 'Headpiece Dimer'" <u>J. Mol. Biol.</u> 255:373-386 (1996)

FORM PTO-1449 (Modified)		Attorney Docket No. <del>18097-030500</del> <u>02-020522-US</u>	Serial No.: <del>08/783,062</del> <u>unassigned</u>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: PHILLIP A. PATTEN et al.	
		Filing Date: <u>12/16/96</u>	Group: Unknown

<u>SE</u> BP	Gram, H. et al., "Phage display as a rapid gene expression system: production of bioactive cytokine-phage and generation of neutralizing monoclonal antibodies," <u>J. Immunological Methods</u> 161:169-176 (1993)
BQ	Hartl, F.U., "Molecular chaperones in cellular protein folding," <u>Nature</u> 381:571-580 (1996)
BR	Higazi, A.A et al., "Single-Chain Urokinase-Type Plasminogen Activator Bound to its Receptor is Relatively Resistant to Plasminogen Activator Inhibitor Type 1," <u>Blood</u> 87(9):3545-3549 (1996)
BS	Hogan, J.C., "Directed combinatorial chemistry," <u>Nature Supp.</u> 384:17-19 (1996)
BT	Holskin, B.P. et al., "A Continuous Fluorescence-Based Assay of Human Cytomegalovirus Protease Using a Peptide Substrate," <u>Anal. Biochem.</u> 226:148-155 (1995)
BU	Horisberger, M.A. et al., "Interferon-Alpha Hybrids," <u>Pharmac. Ther.</u> 66(3):507-534 (1995)
BV	Hu, R. et al., "Evidence for Multiple Binding Sites for Several Components of Human Lymphoblastoid Interferon- $\alpha$ ," <u>J. Biol. Chem.</u> 268(17):12591-12595 (1993)
BW	Janda, K.D. et al., "Direct selection for a catalytic mechanism from combinatorial antibody libraries," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 91:2532-2536 (1994)
BX	Kang, Y.S. et al., "Effects of Expression of Mammalian G $\alpha$ and Hybrid Mammalian-Yeast G $\alpha$ Proteins on the Yeast Pheromone Response Signal Transduction Pathway," <u>Mol. Cell Biol.</u> 10(6):2582-2590 (1990)
BY	Khosla, C. et al., "Generation of polyketide libraries via combinatorial biosynthesis," <u>TIBTECH</u> 14 (1996)
BZ	Kim, B. et al., "Human immunodeficiency virus reverse transcriptase substitutes for DNA polymerase I in <i>Escherichia coli</i> ," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 92:684-688 (1995)
CA	Kirpekar, F. et al., "7-Deaza Purine Bases Offer a Higher Ion Stability in the Analysis of DNA by Matrix-assisted Laser Desorption/Ionization Mass Spectrometry," <u>Rapid Communications in Mass Spectrometry</u> 9:525-531 (1995)
CB	Kontsek, P., "Human Type I Interferons: Structure and Function," <u>Acta Virologica</u> 38:345-360 (1994)
CC	Kristensen, C. et al., "A single-chain insulin-like growth factor I/insulin hybrid binds with high affinity to the insulin receptor," <u>Biochem. J.</u> 305:981-986 (1995)
CD	Langer, J.A. et al., "Binding of Human Alpha-Interferons to Natural Killer Cells," <u>J. Interferon Res.</u> 6:97-105 (1986)
CE	Lathrop, R.H. et al., "Global Optimum Protein Threading with Gapped Alignment and Empirical Pair Score Functions," <u>J. Mol. Biol.</u> 255:641-665 (1996)
CF	Levichkin, I.V. et al., "A New Approach to Construction of Hybrid Genes: Homolog Recombination Method," <u>Mol. Biol.</u> 29(5):572-577 (1995)
CG	Li, J. et al., "Single Chain Human Interleukin 5 and Its Asymmetric Mutagenesis for Mapping Receptor Binding Sites," <u>J. Biol. Chem.</u> 271(4):1817-1820 (1996)
CH	Lotze, M.T. et al., "High-Dose Recombinant Interleukin 2 in the Treatment of Patients with Disseminated Cancer," <u>J. Amer. Med. Assoc.</u> 256(22):3117-3124 (1986)

FORM PTO-1449 (Modified)		Attorney Docket No. <del>18097-020500</del> <u>02-0105-2215</u>	Serial No.: <del>08/769,062</del> <u>Unassigned</u>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: PHILLIP A. PATTEN et al.	
		Filing Date: <u>Unassigned</u> <del>12/16/96</del>	Group: Unknown

<input checked="" type="checkbox"/> CI	Lundberg, K.S. et al., "High-fidelity amplification using a thermostable DNA polymerase isolated from <i>Pyrococcus furiosus</i> ," <u>Gene</u> 108:1-6 (1991)
<input type="checkbox"/> CJ	Mattheakis, L. C. et al., "As in vitro polysome display system for identifying ligands from very large peptide libraries," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 91:9022-9026 (1994)
<input type="checkbox"/> CK	Matthews, D.J. et al., "Substrate Phage: Selection of Protease Substrates by Monovalent Phage Display," <u>Science</u> 260:1113-1117 (1993)
<input type="checkbox"/> CL	McCafferty, J. et al., "Selection and Rapid Purification of Murine Antibody Fragments That Bind a Transition-State Analog by Phage Display," <u>Applied Biochem. Biotech.</u> 47:157-173 (1994)
<input type="checkbox"/> CM	Medberry, S.L. et al., "Intra-chromosomal rearrangements generated by Cre-lox site-specific recombination," <u>Nucl. Acids Res.</u> 23(3):485-490 (1995)
<input type="checkbox"/> CN	Meister, A. et al., "Biological Activities and Receptor Binding of Two Human Recombinant Interferons and their Hybrids," <u>J. Gen. Virol.</u> 67:1633-1643 (1986)
<input type="checkbox"/> CO	Metcalf, W.W. et al., "Mutational Analysis of an <i>Escherichia coli</i> Fourteen-Gene Operon for Phosphonate Degradation, Using <i>TnphoA'</i> Elements," <u>J. Bacteriology</u> 175(11):3430-3442 (1993)
<input type="checkbox"/> CP	Northrup, J.P. et al., "Characterization of the Nuclear and Cytoplasmic Components of the Lymphoid-specific $\alpha$ Nuclear Factor of Activated T Cells (NF-AT) Complex," <u>J. Biol. Chem.</u> 268(4):2917-2923 (1993)
<input type="checkbox"/> CQ	Nürnberg, B. et al., "Receptors and G proteins as primary components of transmembrane signal transduction," <u>J. Mol. Med.</u> 73:123-132 (1995)
<input type="checkbox"/> CR	Ohnishi, H. et al., "Prolongation of Serum Half-Life of Interleukin 2 and Augmentation of Lymphokine-activated Killer Cell Activity by Pepstatin in Mice," <u>Canc. Res.</u> 50:1107-1112 (1990)
<input type="checkbox"/> CS	O'Neil, K.T. et al., "Phage display: protein engineering by directed evolution," <u>Curr. Op. Struct. Biol.</u> 5:443-449 (1995)
<input type="checkbox"/> CT	Ortaldo, J.R. et al., "A species of human $\alpha$ interferon that lacks the ability to boost human natural killer activity," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 81:4926-4929 (1984)
<input type="checkbox"/> CU	Overall, M.L. et al., "Different Interactions of Interferon- $\alpha$ Subtypes at the Surface of Epithelial and Lymphoid Cells," <u>J. Interferon Res.</u> 12:281-288 (1992)
<input type="checkbox"/> CV	Ozes, O.N. et al., "A Comparison of Interferon-Con1 with Natural Recombinant Interferons- $\alpha$ : Antiviral, Antiproliferative, and Natural Killer-Inducing Activities," <u>J. Interferon Res.</u> 12:55-59 (1992)
<input type="checkbox"/> CW	Panka, D.J. et al., "Variable region framework differences result in decreased or increased affinity of variant anti-digoxin antibodies," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 85:3080-3084 (1988)
<input type="checkbox"/> CX	Papas, T.S. et al., "Nucleotide Sequence and Organization of the Transforming Region and Large Terminal Redundancies (LTR) of Avian Myeloblastosis (AMV)," <u>J. Cell. Biochem.</u> 20:95-103 (1982)
<input type="checkbox"/> CY	Parker, L.T. et al., "Peak Height Variations in Automated Sequencing of PCR Products Using Taq Dye-Terminator Chemistry," <u>BioTechniques</u> 19(1):116-121 (1995)
<input type="checkbox"/> CZ	Patten, P.A. et al., "The Immunological Evolution of Catalysis," <u>Science</u> 271:1086-1091 (1996)

FORM PTO-1449 (Modified)

LIST OF PATENTS AND PUBLICATIONS FOR  
APPLICANT'S INFORMATION DISCLOSURE  
STATEMENT

(Use several sheets if necessary)

Attorney Docket No.

~~18037-020500~~

~~DE-020500~~

Applicant: PHILLIP A. PATTEN et al.

Filing Date: ~~12/18/95~~

Serial No.:

08/769,062 *unassigned*

Group: Unknown

<input checked="" type="checkbox"/> DA	Pérez-Pérez, J. et al., "Increasing the Efficiency of Protein Export in <i>Escherichia coli</i> ," <u>Biotechnology</u> 12:178-180 (1994)
<input type="checkbox"/> DB	Pérez-Pérez, J. et al., "DNAK/DNAJ Supplementation Improves the Periplasmic Production of Human Granulocyte-Colony Stimulating Factor in <i>Escherichia coli</i> ," <u>Biochem. Biophys. Res. Commun.</u> 210(2):524-529 (1995)
<input type="checkbox"/> DC	Post, G.R. et al., "G protein-coupled receptors and signaling pathways regulating growth responses," <u>FASEB J.</u> 10:741-749 (1996)
<input type="checkbox"/> DD	Price, L.A. et al., "Functional Coupling of a Mammalian Somatostatin Receptor to the Yeast Pheromone Response Pathway," <u>Mol. Cell Biol.</u> 15(11):6188-6195 (1995)
<input type="checkbox"/> DE	Pugsley, A.P., "The Complete General Secretory Pathway in Gram-Negative Bacteria," <u>Microbiol. Rev.</u> 57(1):50-108 (1993)
<input type="checkbox"/> DF	Ranu, R.S., "DNA Sequencing with $\Delta$ Taq <sup>®</sup> DNA Polymerase," <u>BioTechniques</u> 18(3):390-395 (1995)
<input type="checkbox"/> DG	Raport, C.J. et al., "The orphan G-protein-coupled receptor-encoding gene <i>V28</i> is closely related to genes for chemokine receptors and is expressed in lymphoid and neural tissues," <u>Gene</u> 163:295-299 (1995)
<input type="checkbox"/> DH	Rashtchian, A., "Novel methods for cloning and engineering genes using the polymerase chain reaction," <u>Current Op Biotech.</u> 6:30-36 (1995)
<input type="checkbox"/> DI	Reisine, T. et al., "Molecular Mechanisms of Opiate Receptor Coupling to G Proteins and Effector Systems," <u>Annals N.Y. Acad. Sci.</u> 780:168-175 (1996)
<input type="checkbox"/> DJ	Rohlmann, A. et al., "Sustained somatic gene inactivation by viral transfer of Cre recombinase," <u>Nature Biotechnology</u> 14:1562-1565 (1996)
<input type="checkbox"/> DK	Rosenberg, A.H. et al., "Effects of Consecutive AGG Codons on Translation in <i>Escherichia coli</i> , Demonstrated with a Versatile Codon Test System," <u>J. Bacteriology</u> 175(3):716-722 (1993)
<input type="checkbox"/> DL	Saggio, I. et al., "Functional phage display of ciliary neurotrophic factor," <u>Gene</u> 152:35-39 (1995)
<input type="checkbox"/> DM	Sandkvist, M. et al., "Secretion of recombinant proteins by Gram-negative bacteria," <u>Current Op. Biotech.</u> 7:505-511 (1996)
<input type="checkbox"/> DN	Sauer, B. et al., "Site-specific DNA recombination in mammalian cells by the Cre recombinase of bacteriophage P1," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 85:5166-5170 (1988)
<input type="checkbox"/> DO	Schatz, P.J. et al., "Genetic Analysis of Protein Export in <i>Escherichia coli</i> ," <u>Ann. Rev. Genet.</u> 24:215-248 (1990)
<input type="checkbox"/> DP	Scheidl, T.M. et al., "Automated Fluorescent Dye-Terminator Sequencing of G+C-Rich Tracts with the Aid of Dimethyl Sulfoxide," <u>Biotechniques</u> 19:691-694 (1995)
<input type="checkbox"/> DQ	Seed, B. et al., "Molecular cloning of the CD2 antigen, the T-cell erythrocyte receptor, by a rapid immunoselection procedure," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 84:3365-3369 (1987)
<input type="checkbox"/> DR	Seed, B., Developments in expression cloning," <u>Current Op. Biotech.</u> 6:567-573 (1995)
<input type="checkbox"/> DS	Seto, D. et al., "DMSO resolves certain compressions and signal dropouts in fluorescent dye labeled primer-based DNA sequencing reactions," <u>DNA Sequence</u> 5:131-140 (1995)
<input type="checkbox"/> DT	Shenker, A., "G Protein-coupled receptor structure and function: the impact of diseases -causing mutations," <u>Baillieres Clin. Endo. Metab.</u> 9(3):427-451 (1995)

FORM PTO-1449 (Modified)		Attorney Docket No. 18097-020300 <i>02-00052203</i>	Serial No.: <del>02/769,062</del> <i>Unassigned</i>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: PHILLIP A. PATTEN et al.	
		Filing Date: <del>12/18/96</del> <i>Unassigned</i>	Group: Unknown

<input checked="" type="checkbox"/> DU	Siderovski, D.P. et al., "A new family of regulators of G-protein-coupled receptors?" <u>Current Biology</u> 6(2):211-212 (1996)
<input type="checkbox"/> DV	Simonen, M. et al., "Protein Secretion in <i>Bacillus</i> Species," <u>Microbiol. Rev.</u> 57(1):109-137 (1993)
<input type="checkbox"/> DW	Skatrud, P.L. et al., "Genetic engineering of $\beta$ -lactam antibiotic biosynthetic pathways in filamentous fungi," <u>TIBTECH</u> 10:324-329 (1992)
<input type="checkbox"/> DX	Skerra, A. et al., "Filter Screening of Antibody Fab Fragments Secreted from Individual Bacterial Colonies: Specific Detection of Antigen Binding with a Two-Membrane System," <u>Anal. Biochem.</u> 196:151-155 (1991)
<input type="checkbox"/> DY	Smirnov, Y.V. et al., "Synthesis in <i>Escherichia coli</i> and a Rapid Method of Isolating High-Activity Recombinant His <sub>6</sub> DNA Polymerase from <i>Thermus aquaticus</i> ," <u>Russian J. Bioorganic Chem.</u> 21(5):341-342 (1995)
<input type="checkbox"/> DZ	Smith, L.M., "Sequence from spectrometry: A realistic prospect," <u>Nature Biotechnology</u> 14:1084-1087 (1996)
<input type="checkbox"/> EA	Smith, R.A.G. et al., "Chemical derivatization of therapeutic proteins," <u>TIBTECH</u> 11:397-403 (1993)
<input type="checkbox"/> EB	Solar, I. et al., "Linker modification introduces useful molecular instability in a single chain antibody," <u>Protein Engineering</u> 8(7):717-723 (1995)
<input type="checkbox"/> EC	Song, Z.H. et al., "Molecular Cloning and Chromosomal Localization of Human Genes Encoding Three Closely Related G Protein-Coupled Receptors," <u>Genomics</u> 28:347-349 (1995)
<input type="checkbox"/> ED	Spiegel, A.M., "Defects in G Protein-Coupled Signal Transduction in Human Disease," <u>Ann. Rev. Physiol.</u> 58:143-170 (1995)
<input type="checkbox"/> EF	Spiegel, A.M., "Genetic Bases of Endocrine Disease," <u>J. Clin. Endocrin. Metab.</u> 81(7):2434-2442 (1996)
<input type="checkbox"/> EG	Stemmer, W.P.C., "Rapid evolution of a protein in vitro by DNA shuffling," <u>Nature</u> 370:389-391 (1994)
<input type="checkbox"/> EH	Stemmer, W.P.C., "DNA shuffling by random fragmentation and reassembly: In vitro recombination for molecular evolution," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 91:10747-10751 (1994)
<input type="checkbox"/> EI	Stemmer, W.P.C., "Searching Sequence Space, Using recombination to search more efficiently and thoroughly instead of making bigger combinatorial libraries," <u>Biotechnology</u> 13:549-553 (1995)
<input type="checkbox"/> EJ	Stemmer, W.P.C. et al., "Single-step assembly of a gene and entire plasmid from large numbers of oligodeoxyribonucleotides," <u>Gene</u> 164:49-53 (1995)
<input type="checkbox"/> EK	Stemmer, W.P.C., "The Evolution of Molecular Computation," <u>Science</u> 270:1510 (1995)
<input type="checkbox"/> EL	Strader, C.D. et al., "The family of G-protein-coupled receptors," <u>FASEB J.</u> 9:745-754 (1995)
<input type="checkbox"/> EM	Sweasy, J.B. et al., "Detection and characterization of mammalian DNA polymerase $\beta$ mutants by functional complementation in <i>Escherichia coli</i> ," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 90:4626-4630 (1993)
<input type="checkbox"/> EN	Sweasy, J.B. et al., "DNA Polymerase $\beta$ Can Substitute for DNA Polymerase I in the Initiation of Plasmid DNA Replication," <u>J. Bacteriology</u> 177(10):2923-2925 (1995)

FORM PTO-1449 (Modified)

Attorney Docket

~~18097-020500~~

Serial No.:

~~08/769,062~~ *unassigned*LIST OF PATENTS AND PUBLICATIONS FOR  
APPLICANT'S INFORMATION DISCLOSURE  
STATEMENT

(Use several sheets if necessary)

Applicant: PHILLIP A. PATTEN et al.

Filing Date: ~~12/16/96~~ *unassigned*

Group: Unknown

<input checked="" type="checkbox"/> EO	Su, S.S. et al., "Escherichia coli mutS-encoded protein binds to mismatched DNA base pairs," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 83:5057-5061 (1986)
<input type="checkbox"/> EP	Suzuki, M. et al., "Random mutagenesis of <i>Thermus aquaticus</i> DNA polymerase I: Concordance of immutable sites in vivo with the crystal structure," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 93:9670-9675 (1996)
<input type="checkbox"/> EQ	Tabor S. et al., "DNA Sequence Analysis with a Modified Bacteriophage T7 DNA polymerase," <u>J. Biol. Chem.</u> 265(14):8322-8328 (1990)
<input type="checkbox"/> ER	Théze, J. et al., "Interleukin 2 and its receptors: recent advances and new immunological functions," <u>Immunol. Today</u> 17(10):481-486 (1996)
<input type="checkbox"/> ES	Turner, S.L. et al., "Use of Deoxyinosine in PCR to Improve Amplification of GC-Rich DNA," <u>Biotechniques</u> 19(1):48-52 (1995)
<input type="checkbox"/> ET	von der Osten, C. et al., "Protein engineering of subtilisins to improve stability in detergent formulations," <u>J. Biotech.</u> 28:55-68 (1993)
<input type="checkbox"/> EU	Wagner, R. et al., "Mutation detection using immobilized mismatch binding protein (MutS)," <u>Nucl. Acids Res.</u> 23(19):3944-3948 (1995)
<input type="checkbox"/> EV	Wall, J.G. et al., "Effects of overexpressing folding modulators on the in vivo folding of heterologous proteins in <i>Escherichia coli</i> ," <u>Current Op. Biotech.</u> 6:507-516 (1995)
<input type="checkbox"/> EW	Weck, P.K. et al., "Comparison of the Antiviral Activities of Various Cloned Human Interferon- $\alpha$ Subtypes in Mammalian Cell Cultures," <u>J. Gen. Virol.</u> 57:233-237 (1981)
<input type="checkbox"/> EX	Wettstein, D.A., "Expression of a Class II Major Histocompatibility Complex (MHC) Heterodimer in a Lipid-linked Form with Enhanced Peptide/Soluble MHC Complex Formation at Low pH," <u>J. Exp. Med.</u> 174:219-228 (1991)
<input type="checkbox"/> EY	Young, N.M. et al., "Thermal stabilization of a single-chain Fv antibody fragment by introduction of a disulphide bond," <u>FEBS Letts.</u> 377:135-139 (1995)
<input type="checkbox"/> EZ	Zhang, T. et al., "Circular Permutation of T4 Lysozyme," <u>Biochemistry</u> 32:12311-12318 (1993)
<input type="checkbox"/> FA	Zhao, X., "EPD, a novel technology for drug delivery," <u>Adv. Drug Deliv. Rev.</u> 17:257-262 (1995)
<input type="checkbox"/> FB	

EXAMINER

*S. Blomer*

DATE CONSIDERED

*6-23-03*

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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FORM PTO-1449 (Modified)	Attorney Docket No. <del>18097-020300</del> <i>DC 0203 2205</i>	Serial No.: <del>08/769,062</del> <i>unassigned</i>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	Applicant: PHILLIP A. PATTEN et al.	
	Filing Date: <del>12/18/96</del> <i>unassigned</i>	Group: Unknown

Reference Designation U.S. PATENT DOCUMENTS

Examiner Initial	Document No.	Date	Name	Class	Sub-class	Filing Date (if Appropriate)
<i>52</i> AA	5,525,486	06/11/96	Honjo et al.	C12N	15/00	
AB	5,565,332	10/15/96	Hoogenboom et al.	435	69.1	
AC						

FOREIGN PATENT DOCUMENTS

	Document No.	Date	Country	Class	Sub-class	Translation (yes/no)
AD						
AE						

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

<i>52</i> AF	Cadwell et al., "RANDOMIZATION OF GENE BY PCR MUTAGENESIS" Research, PCR Methods and Applications, pp. 28-33 (1992)
AG	Crameri et al., "CONSTRUCTION AND EVOLUTION OF ANTIBODY-PHAGE LIBRARIES BY DNA SHUFFLING" Nature Medicine 2(1):100-102 (1996)
AH	Mandecki et al., "FOKI METHOD OF GENE SYNTHESIS (RECOMBINANT DNA; OLIGODEOXYRIBONUCLEOTIDE; BRIDGE MUTAGENESIS; CLONING; GENE ASSEMBLY; HIV) Gene 68:101-107 (1988)
AI	Matthews et al., "SUBSTRATE PHAGE: SELECTION OF PROTEASE SUBSTRATES BY MONOVALENT PHAGE DISPLAY" Science 260:1113-1117 (1993)
AJ	O'Neil et al., "PHAGE DISPLAY: PROTEIN ENGINEERING BY DIRECTED EVOLUTION" Current Opinion in Structural Biology 5:443-449 (1995)
AK	Reikofski et al., "POLYMERASE CHAIN REACTION (PCR) TECHNIQUES FOR SITE-DIRECTED MUTAGENESIS" BIOTECH. ADV. 10:535-547 (1992)
AL	Seed et al., "MOLECULAR CLONING OF THE CD2 ANTIGEN, THE T-CELL ERYTHROCYTE RECEPTOR, BY A RAPID IMMUNOSELECTION PROCEDURE" Proc. Natl. Acad. Sci USA 84:3365-3369 (1987)
AM	Sweasy et al., "DETECTION AND CHARACTERIZATION OF MAMMALIAN DNA POLYMERASE $\beta$ MUTANTS BY FUNCTIONAL COMPLEMENTATION IN ESCHERICHIA COLI" Proc. Natl. Acad. Sci. USA 90:4626-4630 (1993)

AMINER *S. Brown* DATE CONSIDERED *6-25-03*

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